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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,565	12/21/2001	Karl-Magnus Moller	040050-050	4977

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ERICSSON INC.
6300 LEGACY DRIVE
M/S EVR C11
PLANO, TX 75024

EXAMINER	
AMIN, NIRAV S	

ART UNIT	PAPER NUMBER
2115	

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/024,565	MOLLER, KARL-MAGNUS	
	Examiner	Art Unit	
	Nirav S Amin	2115	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12/21/2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12/21/2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Digital bus system and method for adjusting clock frequency based on the number of loads.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Iwazaki (US Patent No. 6, 073, 244).

As per claim 1, Iwazaki discloses a bus system [Figure 1(5), Column 5, line 51] comprising: at least one first data bus [Figure 1(5)] that includes at least one data line [Figure 1(5)]; a plurality of transmitter units [Figure 1(31, 32), Column 5, line 52] that are connected to the first data bus; at least one receiver [Figure 1(31, 32), Column 5, line 52] that is connected to the first data bus; means for generating a clock signal [Figure 1(1), Column 5, line 48] which indicates the rate at which data is sent on the first data bus; and means for distributing the clock signal to the transmitter units [Figure 1(41), Column 5, line 54], characterized in that the bus system includes means

for establishing at least one first parameter [Column 6, lines 53-55] that indicates the number of transmitter units which have a need to send data over said first data bus; And in that said clock signal generating means are adapted to generate the clock signal in relation to at least the first parameter in accordance with a predetermined pattern Column 7, lines 27-31], so that the data rate on the first data bus will decrease in response to a reduction in the number of transmitter units that need to send data over the first data bus.

As per claim 5, Iwazaki discloses a bus system wherein the means for generating the clock signal include a digitally controlled oscillator [Column 8, lines 40-43].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-4, 6-7 and 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwazaki in view of Mirov et al (US Patent No. 6,728,890) herein after referred to as Mirov.

As per claim 2, Iwazaki discloses a digital bus system [Figure 1(5)], means for generating a clock signal [Figure 1(1), Column 5, line 48], and control means [Figure 1(4), Column 5, line 51] for controlling said frequency modification in relation to the first parameter. Iwazaki does not expressly disclose generating a reference signal and generating the clock signal by frequency modifying said reference signal. Mirov

discloses generating a reference signal that has a predetermined frequency and frequency modifying means adapted to receive the reference signal and to generate the clock signal by frequency modifying said reference signal [Column 9 lines 7-10] because reducing the clock frequency proportionally reduces power consumption [Column 1, lines 62-64]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to generate a reference signal, and frequency modifying the reference signal to generate the desired clock signal as taught by Mirov in the bus taught by Iwazaki. The motivation for doing so would have been that reducing the clock frequency proportionally reduces power consumption [Column 1, lines 62-64].

As per claim 3, Iwazaki discloses the limitations of claim 2 as discussed in the rejection of claim 2 above. Iwazaki does not expressly disclose a digital bus system wherein the frequency modifying means include a controllable frequency divider. Mirov discloses a digital bus system wherein the frequency modifying means include a controllable frequency divider [Column 9, lines 6-10] to reduce power consumption by reducing the clock frequency [Column 1, lines 62-64]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a controllable frequency divider as taught by Mirov in the bus taught by Iwazaki. The motivation for doing so would have been that reducing the clock frequency proportionally reduces power consumption [Column 1, lines 62-64].

As per claim 4, Iwazaki discloses the limitations of claim 3 as discussed in the rejection of claim 3 above. Iwazaki does not expressly disclose a binary counter. Mirov discloses a digital bus system wherein the frequency divider includes: a binary counter

that has a predetermined number of bits [Column 9, line 6], said binary counter being adapted to receive the reference signal [Column 9, line 7]; and a controllable selector which is connected to the binary counter and adapted to select one of the bits from the counter in response to the control from the control means [Column 9, lines 28-30], wherewith the bit selected constitutes the clock signal for the benefit of producing a reduced frequency clock signal [Column 9, line 64]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a binary counter and a controllable selector as taught my Mirov to the bus taught my Iwazaki. The motivation for doing so would have been that the binary counter produces a reduced frequency clock signal [Column 9, line 64].

As per claim 6, Iwazaki discloses the limitations of claim 1 as discussed in the rejection of claim 1 above. Iwazaki does not expressly disclose a bus system wherein the transmitter units include means for requesting permission to send data over the first data bus. Mirov discloses a bus system wherein the transmitter units include means for requesting permission to send data over the first data bus [Column 2, lines 21-23] to enable the components to efficiently communicate with one another [Column 4, lines 1-2]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include means for requesting permission to send data as taught by Mirov in the bus as taught by Iwazaki. The motivation for doing so would have been to enable the components to efficiently communicate with one another [Column 4, lines 1-2].

As per claim 7, Iwazaki discloses, a bus system wherein the bus system includes means for establishing the number of requesting transmitter units [Figure 1(44), Column

6, lines 53-54], and wherein the means for establishing the first parameter are adapted to establish said first parameter on the basis of the established number of requesting transmitter units [Column 6, lines 57-59].

As per claim 9, Iwazaki discloses a bus system, wherein the bus system is adapted to switch off the clock signal when the transmitter units are not operating [Column 7, lines 34-35].

Claim 8 rejected under 35 U.S.C. 103(a) as being unpatentable over Iwazaki in view of Mirov as applied to claim 6 above, and further in view of Catlin et al (US Patent No. 6,526,518) herein after referred to as Catlin.

As per claim 8, Catlin discloses a programmable bus [Column 4, lines 6-7] wherein the bus system includes means for determining and controlling the order [Column 4, lines 19-26] in which the requesting transmitter units send data over the first data bus for the benefit of providing greater functionality and versatility [Column 4, lines 7-9]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include means for determining and controlling the order in which the requesting transmitter units send data as taught by Catlin in the bus as taught by Iwazaki. The motivation for doing so would have been for the benefit of providing greater functionality and versatility [Column 4, lines 7-9].

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Iwazaki in view of Hopkins et al (US Patent No. 4,210,780) herein after referred to as Hopkins.

As per claim 10, Iwazaki discloses the limitations of claim 1 as discussed in the rejection of claim 1 above. Iwazaki discloses a bus system, however does not

expressly disclose transmitter units which include means for detecting collisions. Hopkins discloses a digital bus system [Column 1, lines 6-8], wherein the transmitter units include means for detecting collisions on the bus [Column 3, lines 53-68, Column 4, lines 1-3] for the benefit of accommodating a large number of low duty cycle subscribers [Column 4, lines 18-19]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include collision detecting means in the transmitter units as taught by Hopkins in the bus system taught by Iwakazi. The motivation for doing to would have been to accommodate a large number of low duty cycle subscribers [Column 4, lines 18-19].

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iwakazi in view of Hopkins as applied to claim 10 above, and further in view of Trainin (US Patent No. 5,642,360).

As per claims 11 and 12, Trainin discloses a network system, wherein the system includes means for establishing at a first value that indicates the collision intensity [Column 2, lines 47-48] and wherein the means for establishing the first parameter are adapted to establish said first parameter on the basis of said first value [Column 3, lines 45-47] for the benefit of optimizing performance of the network [Column 2, line 42]. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to establish a value that indicates collision intensity as taught by Trainin in the bus taught by Iwazaki. The motivation for doing so would have been to optimize the performance of the network [Column 2, line 42].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nirav S Amin whose telephone number is (571) 272-3821. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on (571) 272-3667. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NSA

THOMAS LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100